EXHIBIT E

The Appraisal of Real Estate

The Appraisal of Real Estate

Twelfth Edition

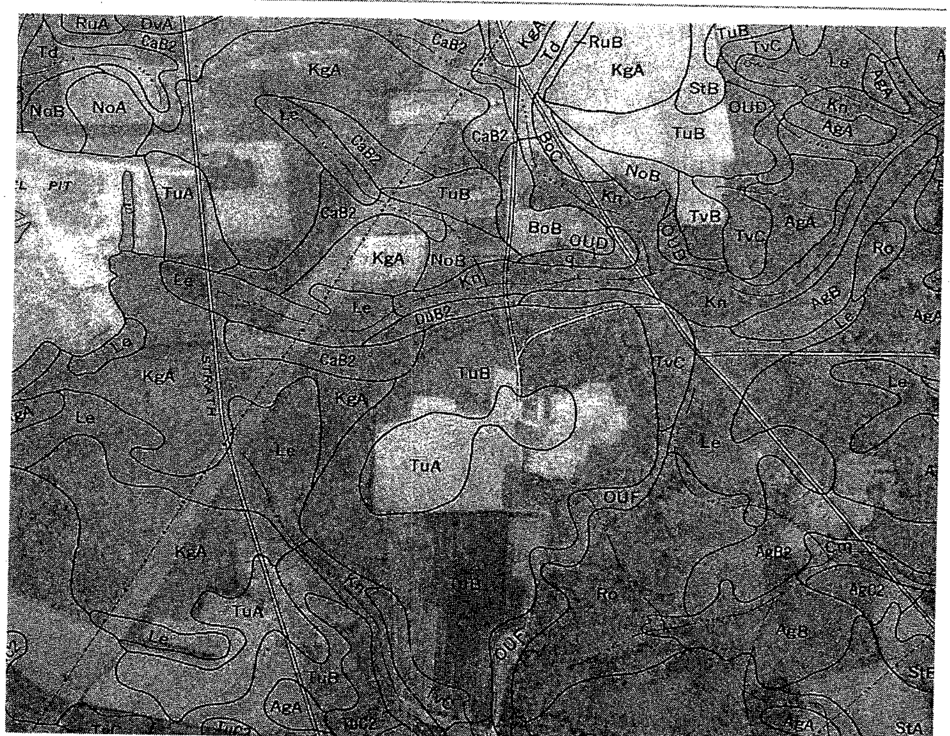
Appraisal Institute
Professionals Providing Real Estate Solutions

875 North Michigan Avenue • Chicago, Illinois 60611-1980
www.appraisalinstitute.org

know whether the water rights are appurtenant to the land or transferable separately from the land. If water rights do not transfer with the land, the property's value may decline significantly and its highest and best use may be changed.

- *Climate.* General climatic conditions and growing seasons can affect crop production and, therefore, land value.
- *Potential crops.* The crops grown on a property are related not only to climate, soil, and irrigation, but also to the availability of labor, transportation, and access to the markets that make, transport, and sell the products produced from crops.
- *Environmental controls.* Cropping patterns are influenced by regulations on herbicides, insecticides, fertilizers, air and water pollution, and wildlife protection. Underground storage tanks, asbestos in farm buildings, and cattle vats are common environmental liabilities.
- *Mineral rights.* The presence of precious metals, oil and gas, sand and gravel, quarry red rock such as building stone, clay deposits, or gemstones on a plot of land can affect its value; as with water rights, the legal right to extract all minerals contained in or below the surface of a property is

Figure 9.8 **Soil Map**



Where to Find

Soils Data

Soils surveys conducted by the U.S. Department of Agriculture, along with state agricultural experiment stations and other federal and state agencies, are used to create soil maps for farmers and ranchers.

For more information, see: http://www.statlab.iastate.edu/soils/nssc/geography.html

as important as ownership of the land itself. Mineral rights may be granted with surface rights or without surface entry because the *mineral estate* is the dominant tenant in most states. Various lease and ownership relation ships may be in effect and should be investigated.

- *Unapparent environmental hazards.* Although the environmental liabilities associated with industrial plants are well known, many of the same liabilities may be present in other properties. One cannot assume that green rural properties that appear clean are actually free of environmental liabilities. In the 1940s and 1950s, farmers commonly used cattle vats—i.e., trenches filled with fuel oil through which cattle were led to rid them of mites and small insects. The fuel oil was often treated with DDT and other pesticides. When this practice fell into disuse, the trenches were simply filled in. Farms often have aging underground storage tanks that held gasoline used to fuel farm vehicles. Farmland may also be contaminated by the accumulation of fertilizers and pesticides. Old railroad beds can constitute an environmental hazard because railroad ties were commonly soaked in creosote-filled trenches dug on site when tracks were laid. Timberlands are not free of contaminants either. Old turpentine stills are often found in areas where forests were once harvested.
- *Other considerations.* The location of wildlife habitats, the distances from populated areas, and the potential for recreational land uses are among the many other considerations to be analyzed in appraising agricultural land. Special tax provisions, such as reduced taxes on agricultural or resource properties, should also be studied.[4]

4. For a thorough discussion of the methods used to describe and analyze the significant characteristics of land used for agricultural production, see American Society of Farm Managers and Appraisal Institute, *The Appraisal of Rural Property*, 2d ed. (Denver and Chicago, 2000).

The approach must also consider how change affects the value of income-producing properties. To provide sound value indications, the appraiser must carefully address and forecast investors' expectations of changes in income levels, the expenses required to ensure income, and probable increases or decreases in property value. The defined income of a real estate investment may differ according to the type of investor. The ongoing securitization and globalization of real estate investment has brought new participants into the market. The income streams that real estate investment trusts (REITs) and pension funds look to are different from the net incomes on which more traditional investors have focused.[1]

The capitalization process must reflect the possibility that actual future income, expenses, and property value may differ from those originally anticipated by an investor on the date of appraisal. The more uncertainty there is concerning the future levels of these variables, the riskier the investment. Investors expect to earn a higher rate of return on investments that are riskier. This should be reflected in the support for the discount rate and capitalization rate obtained from market research.

Supply and Demand

The principles of supply and demand and the related concept of competition are particularly useful in forecasting future benefits and estimating rates of return in the income capitalization approach. Both income and rates of return are determined in the market. The rents charged by the owners of a motel, a shopping center, an office building, an apartment building, or any income-producing property usually do not vary greatly from those charged by owners of competing properties.

If the demand for a particular type of space exceeds the existing supply, owners may be able to increase rents. Vacancy rates may fall and developers may find new construction profitable. Property values may increase until supply satisfies demand. On the other hand, if the demand for space is less than the existing supply, rents may decline and vacancy rates may increase. Therefore, to estimate rates of return and forecast future benefits, appraisers consider the demand (both present and anticipated) for the particular type of property and how the demand relates to supply.

Applicability and Limitations

Any property that generates income can be valued using the income capitalization approach. When more than one approach to value is used to develop an opinion of value for an income-producing property, the value indication produced by the income capitalization approach might be given greater weight than that of the other approaches in the final reconciliation of value indications.

---

1. For a discussion of how pension fund managers and other institutional investors analyze income and cash flow to property, see the section of Chapter 6 on the securitization of real estate markets.